



# Greenhouse Gas Inventory for Virginia

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## **Governor's Commission on Climate Change**

February 1, 2008



# GHG Inventory Basics

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- Statewide estimate of GHG emission from all sources
- Expressed in Carbon Dioxide (CO<sub>2</sub>) Equivalent
- Dominated by energy production & use
- Other sources contribute lesser amounts



# DEQ Inventory

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- Developed for 2005 and 2006
- Covers CO<sub>2</sub>, Methane, Nitrous Oxide, and Fluorine Compounds
- Hybrid methodology used:
  - State specific data for electric power and motor vehicle sectors
  - EPA default estimates for most other sectors
- Electric sector approach – covers both production & consumption



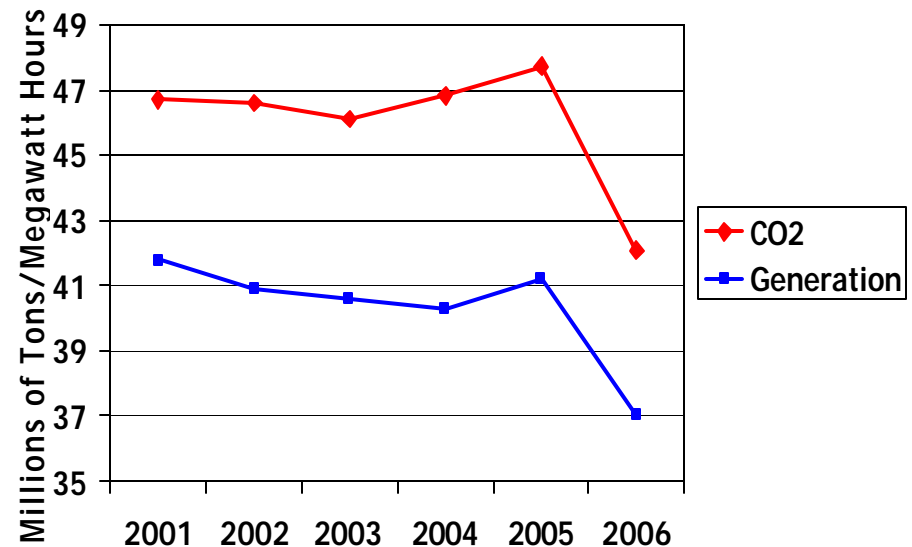
# Energy Use

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- Largest emission sector by far – 89%
- Power generation & use (36%)
  - In-state power plant emissions
  - Electricity imports
- Transportation (31%)
  - Motor vehicle emissions
  - Non-road equipment
- Other fossil fuel use (22%)
  - Total fuel use by all other sources

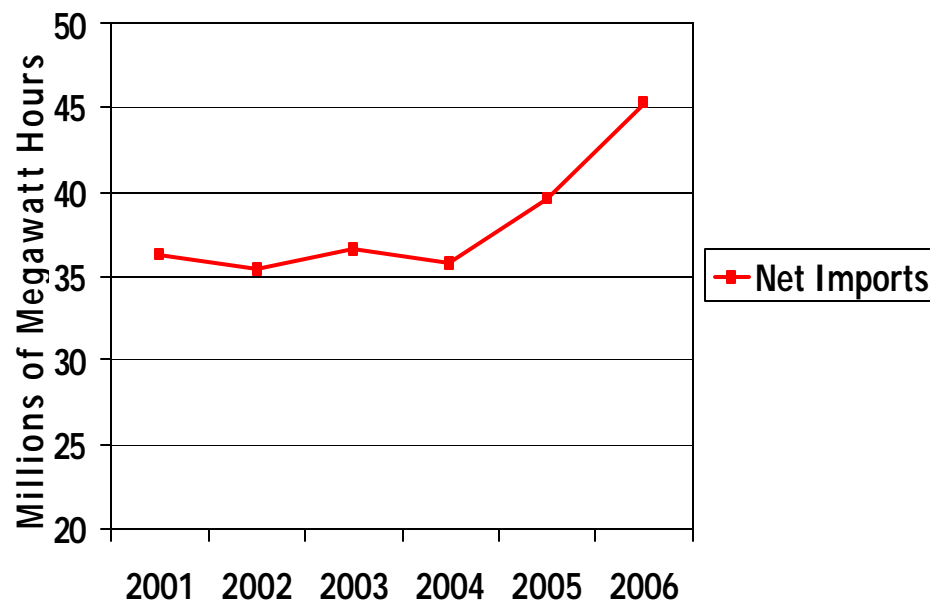
# Power Generation Trends in VA

- In-state production of power/emissions
- Emissions linked to generation
- Trend in both is down since 2000



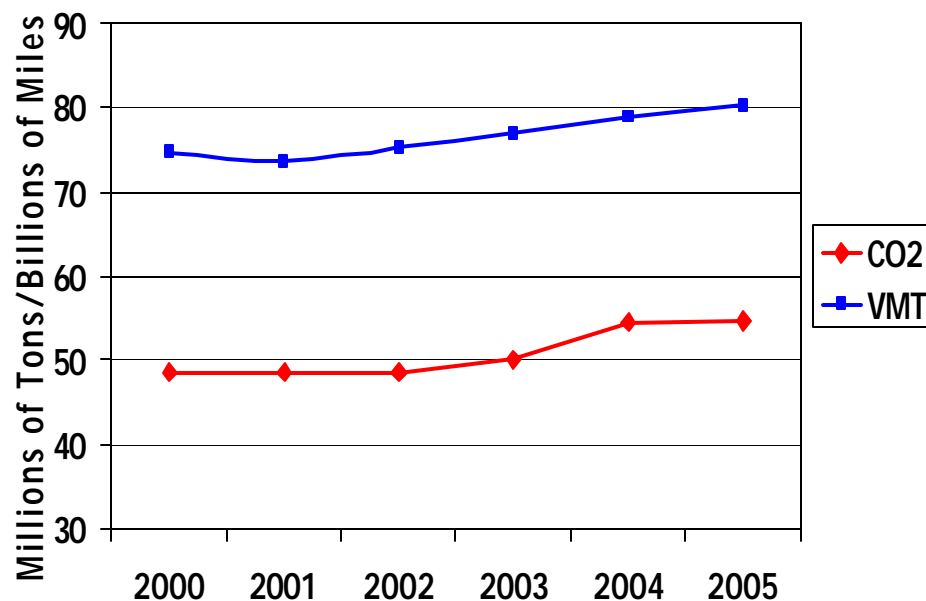
# Power Imports to VA

- VA is a net importer of power
- Also exports power
- Net import amount added to inventory
- Converted into CO<sub>2</sub> Emissions
- The trend is up



# Transportation Emissions

- Vehicle and non-road emissions
- Major factors:
  - Population
  - Miles of travel
- Trend is up since 2000





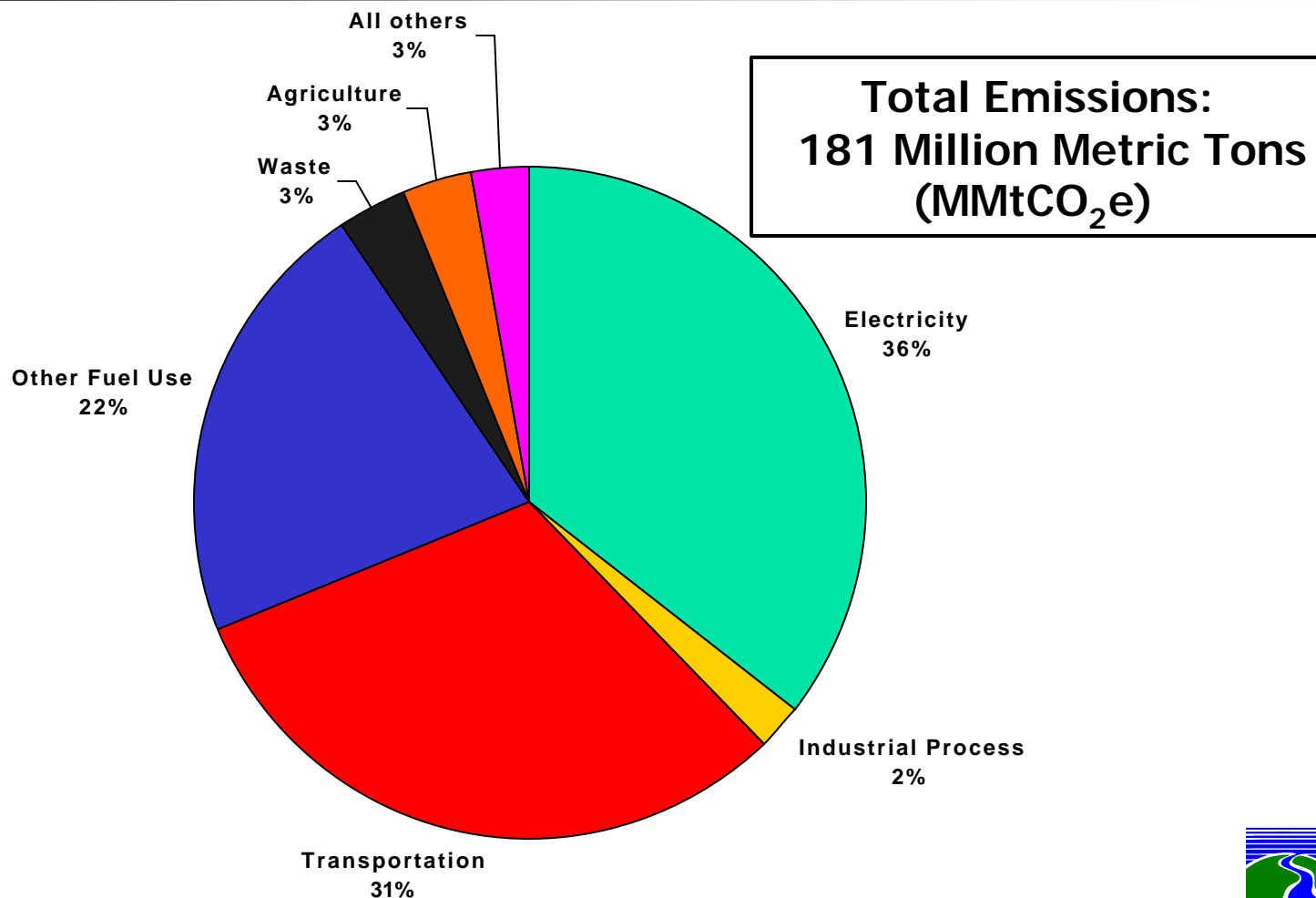
# Other Emissions Sources

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- All other GHG sources - 11%
  - Industrial processes
  - Solid waste management
  - Coal Mining
  - Natural gas/oil production
  - Agriculture
  - Wastewater Management

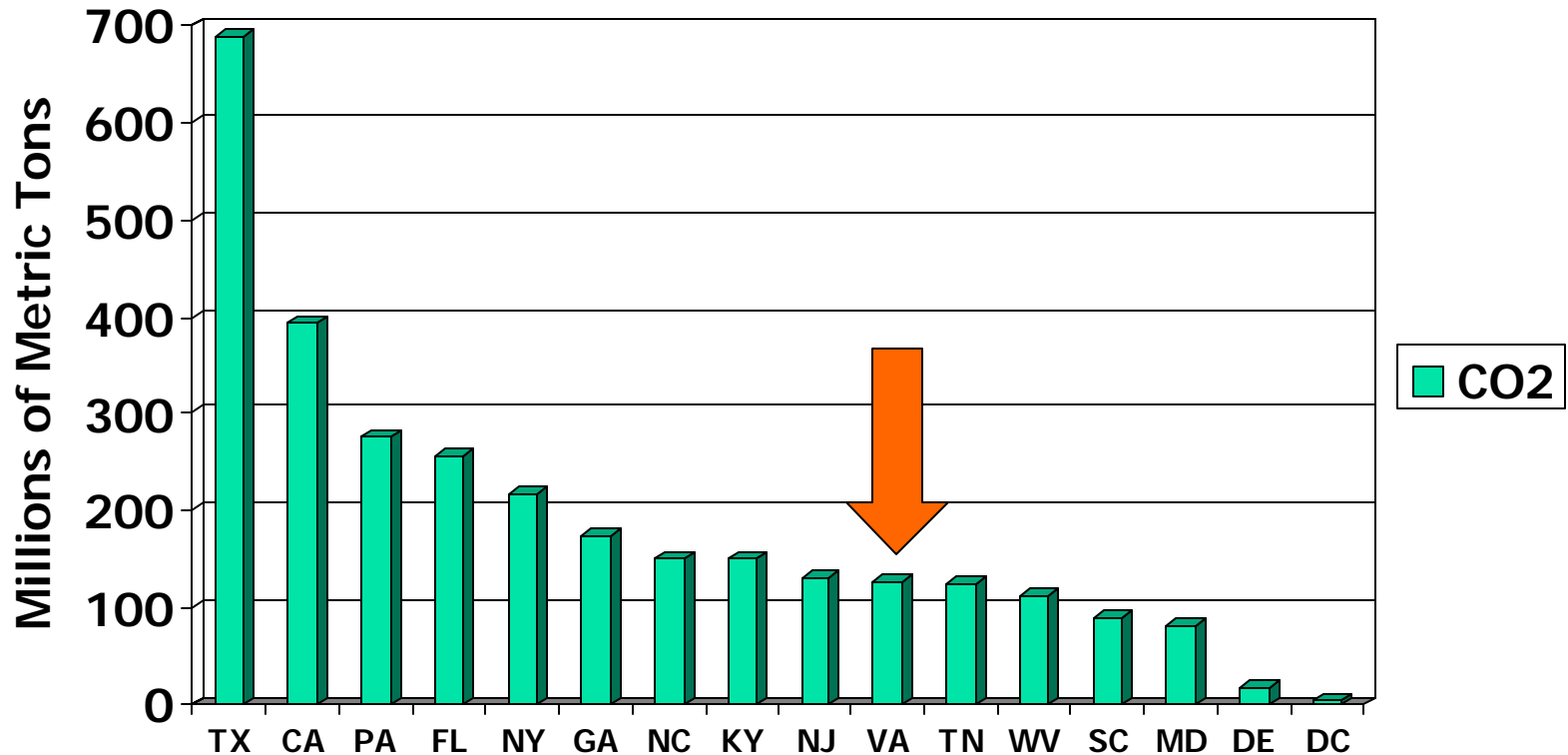


# 2005 GHG Inventory by Sector



# VA Ranking with Other States

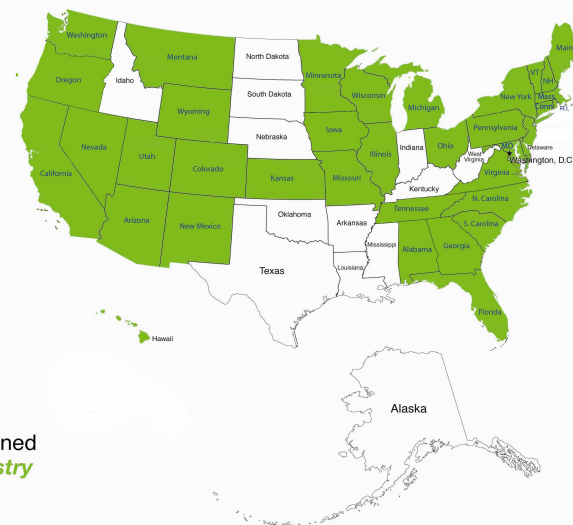
## 2004 Fuel Combustion Emissions



**VA Ranked 17<sup>th</sup> Nationwide**

# The Climate Registry (TCR)

- VA joined: May 2007
- Multi-State Effort to:
  - Provide a single consistent GHG estimation & reporting program
  - Inform any federal reporting program



States that have joined  
*The Climate Registry*



# GHG reporting legislation

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- SB 234 (Whipple) and HB 1230 (Vanderhye)
- Directs the State Air Pollution Control Board to adopt regulations requiring stationary sources to report direct emissions of GHGs annually.
- Directs VDOT to provide information allowing DEQ to maintain a GHG inventory for roads.
- Authorizes the establishment of a voluntary reporting program for indirect emissions.